

# Life Science Research Sample Transfer Technology for On Orbit Analysis, Phase I

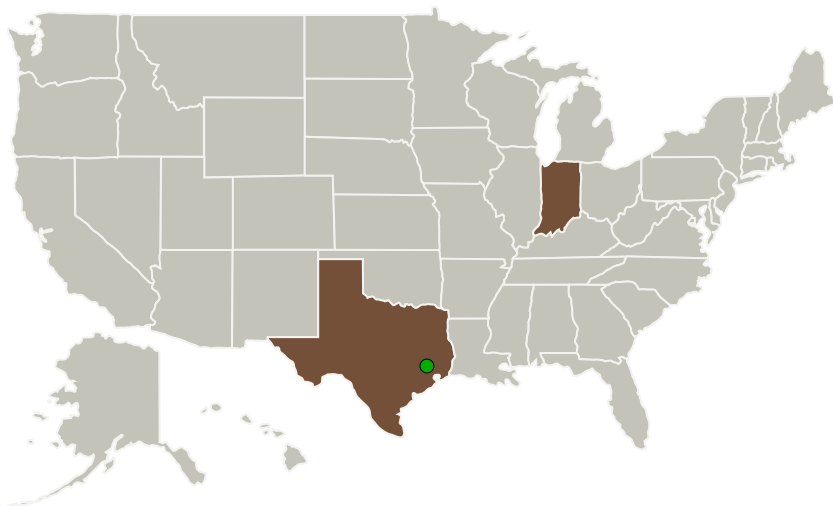
Completed Technology Project (2011 - 2011)



## Project Introduction

Traditionally spaceflight life science experiments require the return of samples to earth for analysis, which is frequently a challenge to the success of investigations. Even with more analytical instruments on ISS, conditions do not facilitate the transfer of liquid samples from experimental devices to analytical devices. In response to the science community's call for on-orbit analyses, Techshot, Inc. proposes to develop an On-orbit Analytical Cassette (OAC) for life and microgravity sciences research, which provides an innovative way to leverage Techshot's ADSEP payload, which is considered by NASA to be part of the existing ISS facilities. The proposed innovation consists of properly contained access ports for the OAC, making it possible to remove a small aliquot of liquid sample from an OAC and transfer it to Techshot's Dynamic Stage for microscopic observations and analysis using the Light Microscopy Module. The OAC is precisely on target to meet NASA's specific objective of (1) providing innovative ways to leverage existing ISS facilities for new scientific payloads, and (2) providing on orbit analysis to enhance capabilities and reduce sample return requirements. Techshot's innovative OAC is destined to improve the throughput of ISS, making it a win-win for both NASA and the science community.

## Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Techshot, Inc.	Lead Organization	Industry	Greenville, Indiana
● Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
Indiana	Texas

## Project Transitions

**February 2011:** Project Start**September 2011:** Closed out**Closeout Documentation:**

- Final Summary Chart(<https://techport.nasa.gov/file/140185>)

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Techshot, Inc.

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Michael Kurk

**Co-Investigator:**

Michael Kurk

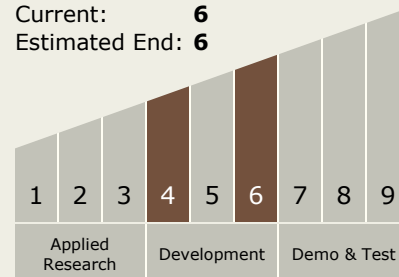
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## Technology Maturity (TRL)

Start: **4**  
Current: **6**  
Estimated End: **6**



## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.3 In-Situ Instruments and Sensors
    - └ TX08.3.3 Sample Handling

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System